

Case 3644***Belostoma ellipticum* Latreille, 1833 (Insecta, Heteroptera, BELOSTOMATIDAE): proposed designation of a neotype**

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Abstract. The purpose of this application, under Article 75.5 of the Code, is to designate a neotype for *Belostoma ellipticum* Latreille, 1833. This species has been accepted by heteropterists since 1962, but it is actually a nomen dubium, since Latreille designated neither types nor a type locality and provided little descriptive information. Subsequent to Latreille, in the absence of a useful diagnosis, authors referred specimens of several other taxonomically valid taxa to *B. ellipticum*. *Belostoma ellipticum* sensu Lauck, 1962, however, is readily defined by the presence of a pair of conspicuous notches along the lateral margins of the ventral diverticulum of the phallus in ventral view, and it is this concept of the species that has gained general acceptance. Fixation of a neotype displaying this feature, which cannot be confirmed in any potentially syntypic Latreille specimen of the *subspinosum* group in Carreno's collection at the Museo Nacional de Ciencias Naturales, Madrid, will facilitate retention of *B. ellipticum* as a valid species name.

Keywords. Nomenclature; taxonomy; Hemiptera; Heteroptera; BELOSTOMATIDAE; *Belostoma*; *Belostoma ellipticum*; aquatic insects; Neotropics; giant water bug.

1. The supposed original description of *Belostoma ellipticum* Latreille, 1833 is a one-page note possibly, but not conclusively, based only on a single specimen

(Latreille, 1833, p. 105, pl. 39, fig. 4); body length was given as 26 mm. Otherwise Latreille wrote that the aforementioned species might be nothing more than a variety of his 'B. briquit -p le', referring to the type species *B. testaceopallidum* Latreille, 1807 of *Belostoma*. Latreille neither designated a type nor gave its locality. This situation led Lauck (1962, p. 59), in his important revision of *Belostoma*, to note that the identity of this species is problematic. Our examination (unpublished) over some years of some of Montandon's (1903, pp. 117–119) male specimens included in Signoret's collection housed in the Mus um national d'Histoire naturelle, Paris, France (MNHN), shows that he indeed applied the name *B. ellipticum* to specimens of *B. anurum*, *B. ellipticum* sensu Lauck and *B. subspinosum*. Concerning North and Central American species, Lauck (1962) mentioned many mistakes in identification by American authors, one example being that the characters used by Palisot de Beauvois (1805, p. 236) to describe his *Nepa subspinosa* (currently *Belostoma subspinosum*) are insufficient to distinguish it from *B. ellipticum*. Although one cannot accept all published records of *B. ellipticum* as correct, this name was used as valid before 1961 (according to Article 11.5) by De Carlo (1938, pp. 216–217) and Lauck (1959, p. 9) who have cited Mexico and Cuba as its distribution. Lauck (1962, figs. 24, 34 and 40) sketched dorsal, lateral and ventral views of the male genitalia of specimens supposed to be *B. ellipticum*, even though this name might be considered a *nomen dubium*, without a type or type locality. Lauck's description was apparently based on specimens from Bahama Islands, Cuba, Guatemala, Honduras, Mexico, and United States of America housed in United States National Museum, Washington, D.C., Snow Entomological Museum, University of Kansas, Lawrence, American Museum of Natural History, New York, and Iowa State University, Ames. Based on this interpretation *B. ellipticum* would be distinguished from the other species of the *subspinosum* group by the presence of a pair of conspicuous notches along the lateral margins of the ventral diverticulum of the phallus (visible in ventral view). Although we have found much variation in eyes and head sclerites in *Belostoma* species, we agree on the diagnostic utility of this genital feature.

2. Latreille's collection was dispersed, and his types are spread across various museums. His collection of Hemiptera went to P.F.M.A. Dejean, and on Dejean's death went to E. Carre o (Horn & Kahle, 1935–1937). Izquierdo et al. (1997) mentioned that the Museo Nacional de Ciencias Naturales, Madrid (CSIC) has about 400 of Latreille's hemipteran specimens, which were housed there after Carre o's death in 1842. This was reiterated in Blanco's book (1988, p. 36). This author also mentions that Latreille's collection, which contained coleopterans, hymenopterans, orthopterans, lepidopterans, neuropterans, dipterans and hemipterans, was transferred to the aforementioned museum after Carre o's death. ICZN Commissioner Miguel Alonso-Zarazaga informed us that Carre o's collection, including Latreille's Hemiptera, is indeed housed there.

3. One of us (J.R.I. Ribeiro) went to Madrid to examine this material. Latreille's specimens, with labels — when present — written in his hand, are contained in 17 boxes. Among these, six specimens (three males and three females) attributable to the *subspinosum* group sensu Lauck (1962) of *Belostoma* were found. None of the six was exactly or approximately 26 mm long, so we cannot confirm that any of them might be the specimen measured by Latreille (1833) in his original description of *B. ellipticum*. The genitalia of two males do not agree with Lauck's (1962, fig. 34)

sketches, instead demonstrating that they belong to *B. subspinosum* Lauck, 1959. One other male has its genital operculum, as well as part of its genitalia, damaged. Four of those male and female specimens are labelled. A male and a female each have an unreadable label (maybe '1919'), whereas a label of other male reads only "Belost / Boscii, Mot[?]"'. Finally, another female has its label completely unreadable.

4. An early entomologist in possession of Latreille's (1833) work would almost certainly identify a *Belostoma* giant water bug belonging to Lauck's (1962) *subspinosum* group or any similar *Belostoma* as *B. ellipticum*. Given the allegedly 'elliptic shape' mentioned by Latreille, at least four different species may have been mentioned as *B. ellipticum* by his successors: *B. anurum* (Herrich-Schäffer, 1848), *B. boscii* (Le Peletier de Saint-Fargeau & Serville, 1825), *B. dallasi* De Carlo, 1930, and *B. subspinosum*.

5. Despite the above-mentioned taxonomic confusion, the name *B. ellipticum* has been accepted since Lauck's (1962) revision, in his sense, and has been in use by virtually some subsequent researchers on giant water bugs (see above). Nonetheless, there is no name-bearing type exhibiting the diagnostic feature of the genitalia. The specimen measured by Latreille (1833) is evidently no longer extant. Even if Recommendation 73F is invoked, and the possibility is admitted that one or more syntypes may be present among the above-mentioned six *subspinosum*-group specimens of Latreille, none of them shows this diagnostic feature, and thus none can be designated as lectotype. Similarly, there is no sort of precise specification concerning Lauck's specimen used for preparing his sketches in his work. With this in mind, there is no data sufficient to ensure recognition of the specimen designated (not fulfilling the conditions of Article 75.3.3).

6. When an author considers that the taxonomic identity of a nominal species-group taxon cannot be determined from its existing name-bearing type and stability or universality are threatened thereby the Code allows an author to request the Commission to set aside under its plenary power (Article 81) the existing name-bearing type and designate a neotype (Article 75.5). A neotype is here proposed, a male specimen from San Salvador, El Salvador, housed for years in N. Nieser's collection, Tiel, The Netherlands, now in the Naturalis Museum (Leiden) with the following three labels: 1st: 'Museum Leiden, DR. M. Boeseman, San Salvador, 18.V. [to] 2.VI – 1953'; 2nd: 'Belostoma ellipticum Latr., det. N. Nieser '73'; 3rd: 'RMNH Leiden collection.' Two new labels will be added: 4th: 'Belostoma ellipticum Latreille, 1833, J.R.I. Ribeiro det. 2013'; 5th: 'NEOTYPE' (pending the ICZN decision).

7. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to set aside all previous type fixations for the nominal species *ellipticum* Latreille, 1833, as published in the binomen *Belostoma ellipticum*, and to designate the male specimen specified in para. 6 above as the neotype;
- (2) to place on the Official List of Specific Names in Zoology the name *ellipticum* Latreille, 1833, as published in the binomen *Belostoma ellipticum* and as defined by the neotype designated in (1) above.

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Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).